

*Remarks on Mr. Lyman's Paper.**By Dr. Persifor Frazer.*

The paper of Mr. Lyman is astonishing in the fact that it does not mention the seven years' work by the Second Geological Survey of Pennsylvania on the New Red in York, Adams, Cumberland and Lancaster counties; although the method he advocates was the very method there adopted, viz., the careful topographical and geographical plotting of the region and the accurate location of every dip. There is neither justice nor expediency in ignoring years of work by a colleague, especially when one occupies a quasi directorship of the Survey under whose auspices the work was done.

From the section across the counties of York and Adams, from the town of York to Dillsburg, made in 1875, careful descriptions of the successive beds were made, as well as notes of their dip, and from these data a column was constructed for correlation with the columns of the Permian, Triassic and Jurassic in England and in Germany. In a paper contributed to Vol. v, *Trans. American Institute of Mining Engineers*, founded on the work done in 1874 in Southeast Pennsylvania, it was suggested that the basal conglomerate of the New Red might find its analogue in the magnesian limestone of England and the Zechstein of Germany, both of which represent the top of the Permian in the respective countries.

The thickness of the strata calculated by H. D. Rogers from the Yardleyville-New Hope-Attleboro' section, and confirmed by the writer, was 51,500 feet, or 15.75 kilometers, but neither Prof. Rogers nor the speaker believed that this represented the actual state of the case. It was stated that the New Red seemed to extend from some point in the Permian, at least, to the base of the Lias, including all the rocks attributed to the Trias and the beds below it, except the lower Rothliegendes of the German scale.

It is added, in the same paper, as a matter of frequent remark that all the beds of the "New Red" are not red. On the contrary, perhaps one-half of the whole series presents to the eye a lead-gray and drab color. It was suggested as possible that the black calcareous slates of Phoenixville might represent a lower horizon than the coal-bearing belt (near Ewingsville?) referred to in the catalogue of specimens of Report C, of York county, for 1874.

With reference to the subordinate position which paleontological should bear to stratigraphical evidence, the case would seem to be not quite fairly stated. If there were everywhere a complete column of strata of which the mutual relations were unmistakable, then paleontological evidence would be forced to conform itself to the column as best it might. But the case is like that of the relation between the astronomical transit and the compass, or the level and the barometer—the latter is invaluable

where the former cannot be employed. For coördination of series in two distant places between which there is no stratigraphical connection, paleontological evidence is the only evidence available.

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*On the Lungs of the Ophidia.*

*By Prof. E. D. Cope.*

*(Read before the American Philosophical Society, May 18, 1894.)*

The condition of knowledge as to the characters of the lungs of snakes was stated by Stannius, in 1836,\* as follows: "The detailed accounts as to the single or double character of the lungs leave much to be desired. Among Ophidia Angiostomata there possess a single sack, Rhinophis and all Typhlopidae which have been examined; as to the Tortricidae [Ilysiidae], there are apparently species with two lungs (*T. xenopeltis*) [= *Xenopeltis unicolor*], and others with a single lung (*T. scytale*) [= *Ilysia scytale*]. Among Eurystomata, all the Peropoda (Boa, Python, Eryx) possess apparently two lungs. The Calamarina that have been investigated have one lung. Among Colubrina and Glyphodonta, there are great variations. All the Coronellae of Schlegel possess, according to Schlegel, a single lung. I find the lung single in *Rhachiodon scaber* [*Dasypeltis*]. *Tropidonotus natrix* [*Natrix vulgaris*] has a very small rudiment of a second lung. *Coluber* [*Spilotes*] *variabilis* possesses, according to Schlegel, the rudiment of a second lung. According to the statement of Meckel, this rudiment is common in *Coluber*. The *Xenodons* have, according to Schlegel, a single lung (*X. severus* and *X. rhabdcephalus*). In *Heterodon* I find a rudimental second lung. The *Lycodons*, according to Schlegel, possess a single lung; as also do *Psammophis* and *Homalopsis*. In *Dendrophis colubrina* Schlegel found the rudiment of the second lung. In *Dipsas*, according to Schlegel, there are variations; but he states that *D. multimaculata*, *D. laevis* and *D. annulata* [*Sibon annulatum*], have but one lung. The *Achrochordina* have but one lung. Among *Hydrophidae* I found in three species of *Hydrophis* the lung-sack simple. Meckel states that *Platurus* has a very small rudiment of a second lung. Among the remaining poisonous snakes there is an insignificant rudiment of the second lung in the *Elapina* and *Crotalina*; while the *Viperina* possess an entirely simple lung."

The absence of tangible external characters which furnish indications of affinity in the Ophidia is well known. The important characters to be found in the skeleton were mostly pointed out by Müller, and Duméril and Bibron examined and utilized the characters of the dentition. The

\* *Zootomie der Amphibien*, p. 108.